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ABSTRACT

The development of the Internet has provided an entirely new means of obtaining psychological healthcare. Web sites have been set up for the purpose of providing information about psychological problems and administering help. Unfortunately, the quality of these sites is not regulated and therefore varies widely. An author-devised rating scale was used to assess six dimensions of site quality, including accuracy, practicality, normalization, sense of belonging, referral, and feedback mechanisms. The present investigation provides descriptive information about the nature of the sources evaluated. It also permits a comparison of the relative quality of the available sites across three different content domains: the needs of parents, substance abuse problems, and emotional disorders. A total of 210 web sites which included three different psychological problem categories (autism, bipolar disorder, and depression) were studied. Availability of quality resources and prevalence of the problems being targeted was not positively associated. This study helps to specify areas of unmet need and may assist in the development of additional resources on the Internet. The rating scale is appended. (Author/EMK)

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Informing Students About The Variable Quality of Psychological Internet Resources: Sites Targeting Substance Abuse Problems, Emotional Disorders, and the Needs of Parents

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Abstract

The development of the Internet has provided an entirely new means of obtaining psychological healthcare. Web sites have been set up for the purpose of providing information about psychological problems and administering help. Unfortunately, the quality of these sites is not regulated and therefore varies widely. An author-devised rating scale was used to assess six dimensions of site quality, including accuracy, practicality, normalization, sense of belonging, referral, and feedback mechanisms. The present investigation provides descriptive information about the nature of the sources evaluated. It also permits a comparison of the relative quality of the available sites across three different content domains. These domains include the needs of parents, substance abuse problems, and emotional disorders. This study helps to specify areas of unmet need and may assist in the development of additional resources on the Internet.

Introduction

The Internet offers a myriad of opportunities to improve delivery of mental healthcare and enhance the lives of those affected by brain and behavioral disorders. The new electronic information technologies are fostering revolutions in how direct services are provided, and also facilitate optimal care indirectly, by keeping professionals more up-to-date and allowing larger-scale research on treatment effectiveness.

One example of the utility of computer technologies in improving the delivery of treatment is the Newark Target Cities Project. This project was undertaken in order to unify the fragmented substance abuse treatment programs in Newark, New Jersey and thus eliminate the inefficiency inherent in a divided system. This project created a network of treatment providers, provided a standard means of assessing and placing clients, and allowed for clients to be matched with the most appropriate treatment program via a computerized management information system (Kraft & Dickinson, 1997).

The major contribution of this system was that it allowed for a treatment provider to access clients' complete case histories. Prior to the implementation of this system it was difficult for one treatment center to discover what sorts of treatments a client had previously undergone. Resources and energy were wasted on repeating entrance

interviews and treatment programs that may have already failed. This program effectively minimizes this sort of duplication waste by providing a complete record of a client across every treatment center (Kraft & Dickinson, 1997).

This is merely one example of the positive effects of one relatively small network. Its easy to see what a global network such as the Internet can do to enhance treatment. It has allowed for collaborative peer consultation in the form of professional user lists. Chambliss (1996) illustrates the utility of these lists in providing timely information about how to proceed with relatively rare situations.

Innovations in direct service delivery include the development of problem-specific lists that create de facto support groups, expert-mediated Web sites that offer everything from virtual milieu therapy to parenting advice and electronic individual psychotherapy with therapists a nation away. For consumers who are introverted, homebound, or for when privacy is a priority, these remote forms of treatment are extremely attractive.

For those with the requisite cognitive and computer skills and the access to appropriate equipment, the Internet literally opens up a world of treatment possibilities previously unimaginable. The result is a growing optimism among treatment professionals concerning the future possibilities for the Internet.

Sampson et al., (1997) envision the future "information

highway" as providing clients in remote locations with access to a variety of specialists that would otherwise be unavailable. They predict that Internet therapy will consist of a combination of counseling sessions by means of video conferencing and computer assisted instruction.

Unfortunately the use of the Internet does not only open up new possibilities; it also creates new problems. In fact, the interaction of counselors and clients by means of electronic media presents several legal and ethical problems. One major problem concerns the issue of confidentiality. Although the use of e-mail seems to be very private in nature, it is arguable that privacy in this form of communication is an illusion. The reason for this is that after messages are sent they commonly go to a large storage facility like that of a university. Once there they are fair game to any hacker who might be so inclined to peruse someone else's mail (Shapiro & Schulman, 1996).

Another problem with e-mail therapy results from the succinct and sporadic nature of the interaction between client and counselor. Healthcare providers in general do not condone the use of e-mail treatment as a plausible replacement for face-to-face counseling and indeed provide disclaimers that state this. The counselors assume that no professional relationship exists, but this can be subject to gross misinterpretation on the part of the client (Shapiro & Schulman, 1996).

Regardless of these problems, the use of the Internet

as a supplement to traditional methods of counseling is a worthwhile endeavor. If counseling is defined as "a learning process designed to help people learn more effective ways of coping with their emotional, social, and career problems" (Sampson & Krumboltz, 1991), then the use of the Internet as a means of disseminating information is valid.

Research studies have already shown that computer mediated networking can be a valuable tool in education. One example of this is a study done by Kruger et al., (1996). They used a combination of face-to-face meetings and computer mediated communication to extend training in team problem solving. Though the subjects did not perceive the computer-mediated communication to be as important as the face-to-face meetings, they did view it as important to their mastery of the training. Based on these findings, Kruger et al., (1996) concluded that the Internet has substantial promise for enhancing traditional training.

In April 1996, Sampson, Kolodinsky, and Greeno (1997) sought to determine the prevalence of these resources on the Internet. Using the WebCrawler search engine they conducted a search of the word 'counseling.' The results of this search showed the existence of 3,764 home pages containing that term. Further analysis of these pages showed that 45% of these sites pertained to psychological counseling and the rest were either not accessible or merely contained the word counseling somewhere in their text.

Sampson et al., repeated this search with the same search engine only three months later and discovered that the number of home pages had grown to 4,584. That is a 15% increase in three months. It is virtually impossible for both consumers and professionals to keep up with this rapid growth.

Much of the existing literature pertaining to the Internet within the field of psychology is descriptive in nature. The main focus of journal articles has been placed on the problems and technological limitations associated with the current Internet (eg. Sampson et al., 1997; Allen & Kostenbader, 1995; Frisse et al., 1994) and projections about its eventual utility (eg. Huang & Alessi, 1996; Sampson et al., 1997). The subject of the Internet as it is currently employed is given little attention.

The Internet is a useful and accessible tool for providing mental health care; however, specific goals and standards for its use must be met. Managed care organizations are already investigating means for reducing costs through computerized medical education, and such forces will further encourage the development of networked information resources (Huang & Alessi, 1996). By anticipating the potential abuses of the Internet, professional associations can assure that the information highway helps rather than harms clients.

Although it would be beneficial for clients to be as knowledgeable about their disorders as their therapists,

inaccurate and inappropriate information could be detrimental to the outcome of their treatment. The validity of data delivered via computer networks needs to be screened prior to patient and public exposure (Sampson, Kolodinsky & Greeno, 1997). Additionally, counselors need to be educated and trained in administering this treatment.

The recent explosion of behavioral healthcare resources on the Net has left many consumers and professionals overwhelmed. The Quality of Websites and lists is very uneven and no systematic mechanism exists to evaluate the utility of a given resource efficiently. Jacobson and Cohen (1997) have discussed the importance of teaching students to evaluate the quality of Internet sites. They argue that users of sites should consider the dimensions of accuracy, comprehensiveness, currency, availability of hyperlinks, and the Web sites' style and functionality. The current study examined both the quantity and quality of extant behavioral healthcare resources on the Internet for a wide variety of problems. Sites and lists were assessed in terms of criteria developed by the authors, reflecting the objectives of ideal electronic resources.

Doran et al. (in press) used this same paradigm to evaluate Internet resources that pertained to common parenting problems, substance abuse problems, anxiety disorders, and eating disorders. The results of this study seemingly indicated that a positive relationship existed between the quality of Web sites and the prevalence of their

topics. In other words, sites that pertained to relatively common problems received better ratings than sites that pertained to less common problems.

This study was designed to expand upon the former study. It sought to evaluate Internet resources that pertain to autism, bipolar disorder, and depression. It utilized the same criteria as in the previous study such that the data from both studies were strictly comparable.

This study provides comparative data describing the quantity and quality of Internet services currently available to those affected by different disorders. This summary may be useful to those interested in specifying areas of unmet needs. It may also help those seeking exemplary models of how this new medium can be effectively applied.

> "The democratization of knowledge is all to the good, if that means the democratization of <u>access</u> to knowledge. But democratization of the access to knowledge should not be confused with the democratization of knowledge itself. And this is where the Internet, or any system of electronic networking, may be misleading or even pernicious. In cyberspace, every source seems as authoritative as every other.
>
> The Internet is an equal opportunity resource; it recognizes no rank or status or privilege. In that democratic universe, all sources, all ideas, all theories seem equally valid and pertinent. It takes a discriminating mind, a mind that is already stocked with knowledge and trained in critical discernment, to distinguish between Peanuts and Shakespeare -- between the trivial and the important, the ephemeral and the enduring, the true and the false" (Himmelfarb, 1997).

Autism

Autism is a fairly common problem. Autistic disorder effects approximately 2-5 people out of every 10,000 (APA, 1994). It is a neurological disorder characterized by a marked impairment of social, emotional and intellectual functioning. The basic criteria for the diagnosis of Autistic disorder include abnormally low levels of social development, impairment of both verbal and non-verbal communication skills, abnormal responses to stimuli, and behavior marked by its repetitive nature (Edelson, 1997).

Autistic disorder is typically diagnosed in early childhood when the individuals' diminished social development begins to become apparent. Seventy five percent of those individuals diagnosed with Autistic Disorder are also diagnosed with mental retardation, IQ between 35-50 (APA, 1994).

The causes of autism are not known, but various theories as to its causes have been stated (Edelson, 1997). These theories are of various natures. They include psychogenetic, psychosocial, cognitive (Wolf-Schein, 1996), and biogenetic theories (Reichelt et al., 1986). All of these theories seemingly place the responsibility for the development of this disorder, to some extent, upon the parents. Responsibility falls upon the parents either as a result of their genes or the environment that they provided for the affected child.

It is therefore easy to conceive that parents of Autistic children would feel some level of responsibility and guilt for their children's condition. These feelings are potentially elevated by typical autistic behaviors such as failure to cuddle, lack of eye contact, and failure to respond to parents' voices or gestures (APA, 1994). Thus, it becomes apparent that the autistic individuals are not the only ones who are in need of assistance.

Parents of autistic individuals may then be driven to find various sources of information, support, and normalization in attempts to understand their child's condition and abate their own feelings of guilt. The Internet provides an ideal way for these parents to accomplish this. However, in order to be truly ideal, the sites that service these individuals must be high in quality. It is the goal of this research to differentiate the high quality sites from those that are lacking in quality.

Bipolar Disorders

Bipolar disorders consist of several subcategories that describe specific aspects of diagnoses. These categories include single manic episode, most recent episode hypomanic, most recent episode manic, most recent episode mixed, most recent episode depressed, most recent episode unspecified, and recurrent major depressive episodes with hypomania.

Generally, bipolar disorders are marked by episodes of mania or hypomania that are typically accompanied by episodes of depression (Sue et al., 1994).

Bipolar disorders are fairly common. Although there is some evidence suggesting that clinicians have a tendency to overdiagnose Schizophrenia rather than bipolar disorder in young people and some ethnic groups, the incidence rates for bipolar disorders do not seem to differ across gender, race, or ethnicity (APA, 1994). Kessler et al. (1994 cited in Nolen-Hoeksema, 1998) estimate that 1-2 out of 100 people will experience at least one bipolar episode over the course of their lives.

Approximately 90 percent of those diagnosed with a bipolar disorder have more than one episode in their lifetimes (APA, 1994). The frequency, number, and duration of these episodes are largely dependent upon the bipolar individual. Episodes may last for one day or as long as several months. Generally these episodes become increasingly frequent and closer together with the passage of time (Nolen-Hoeksema, 1998).

Individuals diagnosed with bipolar disorder are thus left wondering when the next episode will occur. It is not uncommon for them to feel as though they can not trust their emotions or self-perceptions (Nolen-Hoeksema, 1998). This may be a highly discomforting and isolating frame of mind. It is easy to see that a means of social support and normalizing information could aid individuals with bipolar

disorder.

High quality web sites would be able to provide these individuals with 24-hour access to this kind of information. Those with the requisite hardware could easily participate in on-line support groups, read case histories, learn about particular aspects of their disorder, and find referrals to other avenues of obtaining help. However, in order for web sites to be a useful part of recovery, the sites that are high in quality must be differentiated from those that are low in quality.

Depression

Depression is a serious condition that can be emotionally debilitating. In clinical terms depression is described as a psychoneurotic or psychotic disorder which particularly includes sadness, inactivity, thinking and concentration difficulty, a significant increase or decrease in appetite and sleep, feelings of dejection and hopelessness, and in some cases suicidal tendencies (Webster, 1994). Being confronted by these seemingly lifeless symptoms can easily be seen as a terrible way to live one's life.

Unfortunately this distressing disorder is rather common. Although women experience depression about twice as often as men do (Culbertson, 1997), the risk for men is relatively high also. The lifetime risk for major

depressive disorder in community samples ranges from 10% to 25% for women and from 5% to 12% for men (APA, 1994). Because depression is both unpleasant and frequent within the population, it is crucial for individuals to have access to information about the disorder and treatment options.

Within the recent past, those afflicted with depression would typically have to independently locate a therapist in order to obtain information and treatment for their depression. Today, however, there is an additional option in the Internet.

The Internet has recently become a prolific source of psychological healthcare information. One who is afflicted with depression can learn about his or her disorder, obtain the names of therapists, find some suggestions for self-help, find peer support, and in some cases even find treatment on the Web.

Although the Internet is not a substitute for traditional forms of treatment, it is a viable means of complementing those treatments. To ensure that the Internet becomes a treatment aid that is high in quality, it is necessary for its psychological resources to undergo an evaluation. It is the goal of this evaluation process to distinguish between sites of high and low quality such that the utility of the Internet as a treatment tool may be maximized.

Method

Source and researchers

A total of 210 web sites were evaluated from three different psychological problem categories which included autism, bipolar disorder, and depression. The sites were chosen randomly from various common search engines on the Internet. Six trained undergraduate psychology majors from a small liberal arts college on the East Coast completed the evaluations.

After a period of training in the psychological problem areas and on the evaluation process, each rater evaluated roughly 25-40 sites pertaining to one of the three categories. After the initial ratings, a sample of randomly chosen sites was reassigned to a second evaluator in order to permit assessment of interrater reliability.

Materials

Several computers linked to the Internet served as tools for access to the Internet. A standardized evaluation form assessing 6 separate dimensions was used to record the ratings for each site along with some demographic information. Evaluators were asked to rate how well each site provided the following: 1) clear and accurate information 2) "how-to" suggestions for change: practical exercises 3) destigmatizing information; promotion of normalization 4) promotion of a sense of belonging; information to help combat loneliness 5) referral mechanisms, if users found that additional help is needed

and 6) outcomes assessment; feedback mechanism.

Results

Scores on the 6 dimensions were totaled for each site, yielding a summary measure of each site's quality. A one-way ANOVA was performed to compare the summary quality scores across the problem topics. Significant differences ($p<.001$) emerged across the problem topics. Ratings for sites pertaining to depression received significantly more negative evaluations than sites for the other topics (see Table 1).

Overall, the ratings again suggested that the average quality of the current sites was not very impressive. The mean rating across problem topics for all site dimensions was 1.92 (s.d.=1.10) on the 0-4 point scale where 0=absent, 1=extremely inadequate, 2=somewhat inadequate, 3=somewhat adequate, and 4=outstanding.

Inter-item correlations revealed significant relationships among all items used to rate the resources. However, the correlations were not so high as to suggest that any items failed to make a meaningful contribution to the overall rating (see Table 2).

When the data from this study were combined with the data from the previous study (Doran et al., in press), three

problem domains emerged. These problem domains were the needs of parents, substance abuse problems, and emotional disorders. Included in the "needs of parents" domain were sites pertaining to common parenting problems as well as sites pertaining to autism. The substance abuse domain consisted of sites addressing Alcohol abuse, drug abuse, and eating disorders. The emotional disorder domain consisted of anxiety disorders, depression, and bipolar disorders.

A oneway ANOVA was conducted in order to assess the differential quality of Internet resources across both studies. The average quality of sites addressing the needs of parents was significantly higher than the quality of sites directed at the other two types of problems ($x = 14.83$; $sd = 5.06$; $n = 215$). Next highest were ratings of sites addressing substance use problems ($x = 13.65$; $sd = 6.28$; $n = 166$). Both of these problem domains had sites rated significantly higher than those targeting emotional disorders ($F = 30.86$; $p<.001$; $df = 2/512$). The lowest ratings were given to the sites directed at individuals with Emotional Disorders ($x = 10.44$; $sd = 6.27$; $n = 200$).

In order to enhance consistency across raters, additional training was conducted prior to the data collection for this study. This training was associated with significant improvement in the consistency of the evaluation technique. Interrater reliability for the data from this study was .85 ($p<.01$), and the overall reliability for all cases, including the previous study, was .75

($p < .01$).

Discussion

The results of this study were not consistent with our interpretation of the previous study's results. These data did not indicate the positive association between the availability of quality resources and prevalence of the problems being targeted that was previously observed. In fact, a converse relationship was observed in that those sites pertaining to the most prevalent problem, depression, received the worst quality ratings rather than the best.

The availability of higher quality resources for those interested in Autism and Bipolar disorders may actually be the result of depression having both high rates of prevalence and social acceptability. It may be that since depression is relatively common and does not bear any severe social stigma, more computer users are willing to post web pages on this topic than on other, more socially ostracized topics such as autism and bipolar disorder. Thus a disproportionate number of poorly developed personal home pages and product-marketing sites on the web may have caused the quality ratings for depression sites to be low.

General

Combining the data from this and the previous study revealed significant differences among the three general topic domains in terms of site quality. The results show

that sites that service the needs of parents are consistently higher in quality than those that are aimed at substance abuse problems, which in turn are better than sites that address emotional disorders.

One possible explanation for this may be that parents simply crave more information than those who are not parents; creating a greater market for Internet resources aimed at the needs of parents. This makes intuitive sense in that parents are seemingly under a great deal of pressure to perform as "good parents". As a result, parents seek out information that can improve their parenting skills, increase their confidence in what skills they already possess, and show them that they are not alone in their self-doubt. High quality Internet resources have the potential to address all of these needs (at least partially). The high demand for such resources may drive their creation.

The intended audience for the parenting sites evaluated in this study were either parents of autistic children or parents whose children presented them with more typical challenges. In all cases, the parents were presumed to be normally functioning adults. In contrast, the substance abuse and emotional disorder sites were aimed primarily at those suffering from one kind of disorder. It may be that creators of the latter sites held themselves to a lower standard of excellence, because of negative attitudes toward the intended audience.

Extensions of this study should include additional training of raters in the consistent use of the rating system in order to further improve interrater reliability. Randomized assignment of cases to raters would further reduce the problems of confounding, although this would require that all raters become expert in all problem areas. Inclusion of behavioral healthcare consumers in the panel of raters would also enhance the usefulness of this research.

Table 1
Mean Quality Rating by Topic

	Number of Cases	Mean Quality Rating	Std. Deviation
Autism	75	14.09	5.43
Bipolar Disorder	58	12.36	7.32
Depression	77	8.36	5.77
Total	210	11.51	6.59

Table 2

Inter-Item Correlations

	Practical Suggestions For Change	Feedback Mechanisms	Clear and Accurate Info	Promote Sense of Belonging	Promote Normalization	Referral Mechanisms
Practical Suggestions For Change	1					
Feedback Mechanisms	.277	1				
Clear and Accurate Info	.469	.398	1			
Promote Sense of Belonging	.530	.525	.343	1		
Promote Normalization	.537	.468	.417	.671	1	
Referral Mechanisms	.298	.526	.405	.400	.385	1

Evaluation Sheet
Psych Help Resources

Rater_____
Disorder_____
Site Name_____
Site Address_____

Type of Site: General Disorder Class Specific
Disorder Specific Other
Site Motive: Informative Provide Help
Commercial Other

Use a four point scale to evaluate the resource on each of the following dimensions.

0 Absent
1 Extremely Inadequate
2 Somewhat Inadequate
3 Somewhat Adequate
4 Outstanding

_____Clear and Adequate Information
_____Practical Suggestions for change
_____Destigmatizing Information; Promotion of Normalization
_____Promote sense of Belonging; Combat Loneliness
_____Referral Mechanisms
_____Outcomes Assessment; Feedback Mechanisms

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Evaluation Descriptions

Type of Site: example : general = "mental health site", disorder class specific = "chemical dependency", disorder specific = "alcoholism", other = written explanation.

Site Motive: Informative = purely passing on information, Provide Help = suggestions for change, self-help, Commercial = goal to obtain profit, Other = written description.

Clear and Adequate Information = Page is well written and easy to follow, no apparent gaps in information.

Practical Suggestions for Change = How to's ,

Destigmatizing information; Promotion of Normalization = Personal accounts, success stories, inspiration.

Promote sense of belonging, combat loneliness = chat lines, on-line support groups, immediate access to others.

Referral Mechanisms = contacts to community groups, and other Internet sites (non-interactive) Non cyber referrals.

Outcomes Assessment; Feedback Mechanisms = counseling via the Internet only (e-mail or one on one chats with some one in a counseling position) Users access to information on own recovery rates.

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